5. The work ought to be undertaken by a committee, and the literature treated after some such plan as the following:

1. Periodicals, Reports of societies. 2. Text- and hand-books, nomenclature. 3. Classification. *a*, Phanerogamæ. *b*, Cryptogamæ. 4. Floras; *a*, of North America, *b*, of other countries. 5. Morphology. 6. Anatomy. 7. Physiology (including Biology and Phaenology). 8. Microscopy and Technique. 9. Biography. 10. Travels. 11. Horticultural botany. 12. Agricultural botany. 13. Forest botany. 14. Medical and Pharmaceutical botany. 15. Varia.

6. The editor of the work should be assisted by authors sending him a reprint of each of their papers. He should distribute these among the members of the committee for reviewing, and the reprints ought to become the property of the members to whom the editor sends them.

7. Not later than April each year the editor should have the reviews in hand so that the whole work could appear in July.

The details of this plan are easily understood. All of us know how valuable Just's Jahresbericht is, owing to the reviews, and how little attention it pays to American literature. Of course we must appreciate that such a work as has been planned above is an international affair, and for this reason especially, I have not the least doubt that it would pay the publisher well.

I should be glad to give some of my time to such a work, doing the purely bibliographical work, and taking care of the reviews of the literature bearing on the subjects named above under 6, 7, and 8. I would like to associate with fellow-workers, and form a committee which could bring the matter before the meeting at Madison. Owing to the amount of material that I have brought together, it would be possible, by properly attending to the matter to issue a report for 1892 this fall. —J. Christian Bay, *Missouri Botanical Garden.*

NOTES AND NEWS.

The Linnæan medal was recently presented to Professor Oliver, for many years curator of the herbarium at Kew.

Mr. D. T. MacDougal, recently assistant in botany at Purdue University, has been appointed instructor in vegetable physiology at the University of Minnesota.

Dr. Pax, of the University of Berlin, has been appointed Director of the Botanic Gardens at the University of Breslau, the position made vacant by the death of Dr. Prantl.

The University of Minnesota has established an inland biological station at Gull Lake. The lake is in Cass county, Minnesota, and the station is reached from Brainerd.

Miss Alice Eastwood, formerly of Denver, Colo., has succeeded Mrs. Katherine Brandegee, as curator of the Herbarium of the California Academy of Sciences, and as acting editor of Zoe.—*Zoe.*

A LIST of the Hymenomyceteæ of Orleans county, N. Y., has been published by Dr. Charles E. Fairman, in the Proceedings of the Rochester Academy of Science, II. 154–167. The lists contain 126 species.

THE MICHIGAN Agricultural College in its exhitbit in the Department of Liberal Arts at the Columbian Exposition is displaying the photographs of about 150 American botanists, together with a small number of foreign botanists.

IN THE *Bulletin de l'Herbier Boissier* I. 184–190, R. Chodat and O. Malinesco have published an article dealing with the polymorphism of the alga, *Scenedesmus acutus* Mey., accompanied by a plate illustrating this striking example of polymorphism.—BAY.

MISS FLORA N. VASEY, of the Department of Agriculture, Washington, D. C., is compiling a catalogue of all women doing *actual* work in botany either professional or amateur or both. Those wishing their names included will send full name and address with specialty to Miss Vasey.

IN *Grevillea* for June Dr. C. B. Plowright completes the life history of three Uredineæ, by showing that *Puccinia Festucæ* produces æcidiospores on Lonicera periclymenum, *Puccinia Agrostidis* on Aquilegia vulgaris and *Uromyces lineolatus* (found on Scirpus maritima) on Glaux maritima.

MR. ROBERT DOUGLAS, in a recent paper on coniferous forests read before the Nurserymen's Convention at Chicago, stated that "on the 500th anniversary of the discovery of this continent there will be choice evergreens in America, but like the buffalo, the elk and the antelope, they will be confined to public parks and private grounds."

BARON VON MUELLER proposes to prepare a volume completing Bentham's *Flora Australiensis*. His personal researches in Australia having begun in 1847 and his explorations having been continued ever since, he is pre-eminently prepared for such a work. It is a strange fact that this will be the first Flora for any of the great divisions of the globe.

A BIOGRAPHICAL SKETCH of Alphonse De Candolle, together with a complete bibliography of his writings is published in *Bulletin de l'Herbier Boissier* for April, having been prepared by H. Christ. The bibliography shows 229 titles, and it must be remembered that some of these titles represent large volumes, and in a few cases a series of volumes.

DR. DE CHALMOT has given[1] a continuation of his paper previously referred to here, and his results are the following: (1) The pentosanes decrease in the seeds during the germination, and appear again in the stems and roots; most probably they are transferred. (2) The total amount of pentosanes increases during germination, and it seems probable that seedlings can absorb them out of the soil. Pisum sativum and Zea Mays, as well as Tropaeolum were the material used.—BAY.

[1] Reprint from the American Chemical Journal, XV. 276–285.

THE NEXT meeting of the Australasian Association for the Advancement of Science will be held in Adelaide, South Australia, commencing on September 25, 1893, at which time South Australia will be at its best. There is no better time at which to visit Australia than when spring is merging into summer, and to naturalists this time of year is specially attractive.

DR. MAXIME SCHUMANN whose travels in Congo are well known has been at the Missouri Botanical Garden planning his long expedition in this country. He starts from Fort Smith, Kansas, and goes afoot as far as Albuquerque. From there he will go to El Paso, Mexico, and through that country, ending his tour at Vera Cruz. He intends to take a long time for this expedition.—BAY.

DR. JOHN M. COULTER has entered upon the Presidency of Lake Forest University, an institution with its preparatory and collegiate departments at Lake Forest, Ill., a suburb of Chicago, and its professional schools in Chicago. The large herbarium which he brought to Indiana University and so largely increased there goes with him to Lake Forest. Mr. Edwin Uline has been appointed Curator.

NUMBERS 82, 83 and 84 of "Die natürlichen Pflanzenfamilien" have just been issued. They contain Ochnaceæ and Stachyuraceæ by Gilg; Caryocaraceæ, Marcgraviaceæ and Theaceæ by Szyszylowicz; Quinaceae and Icacinaceæ by Engler; Chlænaceæ by Schumann; Hippocrateaceæ by Lösener; Stackhousiaceæ, Staphyleaceæ, Aceraceæ, by Pax; Scrophulariaceæ by Wettstein; Lentibulariaceæ by Kamienski; Orobanchaceæ by Beck; Gesneriaceae by Fritsch.

THE SECOND SESSION of the Colorado Summer School of Science, Philosophy and Languages, will be held at Colorado Springs, Colorado, during the month of July, 1893. The botany will be in charge of Mr. Albert F. Woods, of the University of Nebraska. Mr. Woods' course will consist of lectures and laboratory work on the life history of typical representatives of the great groups of the vegetable kingdom, represented as far as possible by the flora of the region.

M. EPHREM AUBERT finds that the fleshy plants transpire less rapidly than other plants not only because of their form and mechanical hindrances to evaporation but because of the presence of organic acids in the Crassulaceæ and the Mesembryanthemaceæ, and of acids and gums in the Cactaceæ. The curve for water transpired by different regions of fleshy plants presents a minimum corresponding to the maximum of the curve of malic acid found in the same regions.

CHEMICAL AND physiological studies on the tannins have followed a course different from that of the older studies since the publications of F. Reinitzer and L. Braemer were issued (1889–'91), and since E. and O. Nickel improved the reagents hitherto employed. Professor Henry Trimble has just published the first volume of an extensive series of studies on these bodies, many of which have caused considerable trouble in the chemistry of plants.[1]—BAY.

[1] HENRY TRIMBLE:—The tannins; a monograph on the history, preparation, properties, methods of estimation, and uses of the vegetable astringents. With an index to the literature of the subject.—Philadelphia, 1892, Vol. I.

THE EXPERIMENTS concerning the assimilation of free nitrogen are still carried on in the Rothamsted Experiment Station. Sir J. B. Lawes and Professor J. H. Gilbert have published an important paper, reprinted from the Journal Roy. Agricult. Soc. of Engl. III. II. part iv, entitled, "The sources of the nitrogen of our leguminous crops." In the Rothamsted Memoranda for June, 1892, the plans of this well known station were published, and also a list of the papers hitherto published from the institution.—BAY.

ERYTHEA for May contains a first installment of new plants of the Pacific coast by Thomas Howell; notes on a new Californian *Fimbriaria* and on an interesting form of *Polypodium Californicum* by Marshall A. Howe; Professor Greene presents the first paper of a series entitled "Corrections in Nomenclature," replacing in the present one the untenable name *Jacksonia*, as applied by Robert Brown to an Australian genus of Leguminosæ, by *Piptomeris* Turcz. and changing the thirty-six species; also a long review, by the same writer of Professor Conway MacMillan's "Metaspermæ of the Minnesota Valley," in which the general tone of the work is commended and attention called to inaccuracies in bibliography.

A VERY complete investigation of the occurrence of starch and sugar, and the presence and function of diastase in leaves, is published in the *Journal of the Chemical Society* for May (pp. 604–677) by Horace T. Brown and G. Harris Morris. A good résumé of all previous work is given, with critical remarks. Their work warrants the opinion that the beginning of the change in the conversion of starch in the plant is dependent upon the action of the protoplasm, but that its continuance and completion is due to an enzym. They also conclude that cane sugar is an antecedent of the formation of starch by chloroplasts, and that cane sugar is translocated in the plant as dextrose and levulose, and the starch as maltose.

THE LABORATORY of marine biology of the University of Pennsylvania, at Sea Isle City, N. J., opens for its third season, during July and August. It has been thought best not to offer any special course of instruction during the coming season. There will be opportunities, however, for beginners by special arrangements with the professors and instructors who will be working at the laboratory during the season. The University especially desires that investigators and teachers of natural history shall avail themselves of the opportunities offered, and for them therefore no charge will be made except for glassware taken from the laboratory and reagents used. Students desiring instruction will be charged according to the amount of time devoted to them. The laboratory is very completely equipped both in the way of buildings and collecting apparatus.

LAST WINTER a memorial was circulated petitioning the Smithsonian Institution to support a table at the Naples Zoological Station. Thirteen copies of the memorial were sent out. Twelve bearing the signatures of nearly two hundred working biologists, representing about eighty universities, colleges, and scientific institutions, were returned and were presented in person to Professor S. P. Langley, secretary of the Smithsonian Institution. In response to the memorial the secre-

tary of the Smithsonian Institution announces that the Institution has secured a table at the Naples Zoological Station for the use of American investigators. Applications for the use of this table will be received at any time, and should be accompanied by credentials indicating that the candidate is qualified to carry on original investigation in some field for which especial facilities are offered at the Naples Station. These credentials should be accompanied by a statement of the history of the candidate as a student and investigator, together with a list of such original papers as may have been published by him. The application should be also accompanied by a statement of the character of the investigation which the candidate desires to pursue, and the dates between which he wishes to occupy the table.

Appointments will be made by the secretary of the Smithsonian for a specific period, and, in the consideration of the claims of the candidates, the secretary will probably avail himself of the counsel of an advisory committee of four, representing the National Academy of Sciences, the Society of American Naturalists, the American Morphological Society, and the Association of American Anatomists.[1]

Persons who may occupy the Smithsonian table are expected to make a report at the end of their term of occupation, or every three months in case of long residence at the station. It is expected that due credit will be given to the Smithsonian Institution in any publication resulting from studies carried on at its table, and the "Smithsonian Contributions to Knowledge" will probably be available for the publication of at least a part of the papers resulting from the Naples investigations.

All correspondence should be addressed to S. P. Langley, Secretary of the Smithsonian Institution, Washington, D. C.

In the May number of the *Bulletin of the Torrey Botanical Club* Mr. Carlton C. Curtiss has presented some useful work in the examination of the surface characters of the seeds of some of our native Orchids, and has shown that while such minute anatomical characters may be of occasional use they cannot be exclusively relied upon in revealing genetic relationship; Professor Thomas C. Porter has published a list of the grasses of Pennsylvania as exhibited by that state at the World's Fair, numbering 166; the same author discusses *Solidago humilis* and its allies, delimiting *S. Virgaurea*, *humilis*, and *alpestris* and describing several new varieties of the first named species; Messrs. C. H. Kain, Thomas Morong, and Frederick Coville give short biographical sketches of Francis Wolle, Thomas Hogg, and Dr. George Vasey; Mr. F. H. Knowlton raises the question as to the proper place for the insertion of the interrogation point when used to indicate some question in reference to the plant-name; and Mr. John K. Small supplements his Revision of Polygonum by further notes and descriptions of new forms.

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[1]This committee consists of Dr. J. S. Billings, of Washington, chairman; Professor E. B. Wilson, of Columbia College, New York; Dr. C. W. Stiles, of Washington, and Professor John A. Ryder, of the University of Pennsylvania.